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EXAMINER	
BOWERS, NATHAN ANDREW	
ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
06/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary	Application No.	Applicant(s)	
	10/501,158	THUROT, PHILIPPE	
	Examiner	Art Unit	
	NATHAN A. BOWERS	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-11 and 13* is/are pending in the application.

4a) Of the above claim(s) *13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Newly submitted claim 13 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 13 is drawn to a method, whereas previously presented claims have all been exclusively drawn to a system. Restriction for examination purposes as indicated is proper because the newly added method claim is independent and distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required. More specifically, method claim 13 is characterized by a separate status in the art in view of its different classification (with respect to the system claims), and the prior art applicable to the system claims would not likely be applicable to the invention of the method claim.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 13 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the single gas measurement probe" in lines 24-25. There is insufficient antecedent basis for this limitation in the claim. Although the claim previously recites "one measurement probe," this language is patentably distinct in interpretation from "a single gas measurement probe."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1) Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US 4670148) in view of Katz (US 4838733), Yao (US 6541073) and Billings (US 5653288).

With respect to claims 1, Schneider discloses an optimized system for the regulation and discontinuous measurement of the gas content in composting waste. At least one remote bay (Figure 1:19) contains one or more gas measurement probes

(Figure 2:10.1-10.5) that are capable of determining oxygen and carbon dioxide concentration. This is disclosed in column 2, lines 30-58 and in column 3, lines 12-40. Column 5, lines 40-57 state that the operation of a gas intake pump (Figure 1:13) and a plurality of electric valves (Figure 2:11.1-11.5) is regulated by a program controller (Figure 1:17). A smooth pipe (Figure 1:9.3) connects each of the electric valves to a gas sampling device such that gases at the sampling device are sent to the measurement probes. Although Schneider does not expressly disclose the use of plastic pipes, plastic is considered to be a well known and versatile class of materials. The oxygen measurement probe is able to supply within a very short response time the measurement of oxygen content in the compost material. As evidenced by the Figures, the sampling device comprises a rod with two opposite ends able to be driven into a pile of compost. Schneider, however, does not expressly disclose that the sampling rods are tapered and include an air intake strainer.

Katz discloses a system in which air samples are removed from a compost pile using a plurality of sampling device rods (Figure 3:32). The rods are connected to a pump (Figure 1:78) capable of drawing gases through the use of suction. Column 3, lines 9-40 state that each rod includes an air intake strainer (Figure 3:48 and Figure 7:184). Katz additionally states that the end of the sample tube is rounded. See Figure 6. The rounded end of the Katz sample tube is considered to be tapered because it gradually becomes narrower toward the end. Rounded ends are inherently tapered because the thickness of the tube decreases steadily along the rounded section of the end.

Schneider and Katz are analogous art because they are from the same field of endeavor regarding compost gas removal devices.

At the time of the invention, it would have been obvious to include screens on each of the sampling rods disclosed by Schneider. Katz teaches that it is important to preclude the movement of solid compost chunks into the sampling rods. The use of screens effectively prevents such fouling while still allowing the sampling of gases. Katz teaches that the screens enable the passage of a great volume of gases over a given time, but holds back the solid materials of the landfill. It would have additionally been obvious to ensure that the end of the Schneider sampling rod is tapered. One of ordinary skill would have understood that this would have helped the rods penetrate through the waste pile without requiring pre-dug wells.

The combination of Schneider and Katz still differs from Applicant's invention because Katz does not expressly state that the air intake strainers are formed on hollow rods corresponding to associated pipes such that each pipe passes through a hollow rod and emerges inside the air intake strainer. Instead, Katz teaches that the air intake strainers are directly formed on the end of each pipe.

Billings discloses a contaminant removal system in which pipes (Figure 5:50) are inserted into injection wells formed within a soil sample. Each pipe is passed through a hollow rod (Figure 5:58) that includes an intake strainer formed by a plurality of ports (Figure 5:60) and a screen (Figure 5:62). Contaminants are removed from the soil

sample by sucking a fluid through the screen and out each pipe. This is described in column 7, line 52 to column 8, line 59.

Schneider and Billings are analogous art because they are from the same field of endeavor regarding the removal of selected compounds from a compost/soil sample.

At the time of the invention, it would have been obvious to construct an air intake strainer at one end of each Schneider pipe by passing the pipes through hollow rods comprising the air intake strainers. One of ordinary skill would have found this construction to be functionally equivalent to the arrangement set forth by Katz (i.e. the direct formation of air intake strainers on the pipes). Because the combination of Schneider with Katz and Billings is simply the arrangement of old elements (i.e. plastic pipes, hollow tubes, air intake strainers, etc.) in a predictable way to obtain predictable results, the combination is obvious.

The combination of Schneider, Katz and Billings still differs from Applicant's invention because neither Schneider nor Katz teach the use of zirconium oxide sensors.

Yao discloses a zirconium oxide sensor capable of detecting oxygen levels in a plurality of biochemical applications. Column 1, lines 8-29 state that it is well known in the art to use zirconium oxide in the formation of electrode components within bioreactor oxygen probes.

Schneider and Yao are analogous art because they are from the same field of endeavor regarding oxygen detection sensors.

At the time of the invention, it would have been obvious to utilize the oxygen sensors disclosed by Yao in the system disclosed by Schneider. As evidenced by Yao, zirconium oxide probes are known in the art as effective means capable of monitoring oxygen concentrations within a gas stream. It would have been apparent to equip the system of Schneider with any oxygen sensor, including zirconia sensors, that are capable of effectively determining relative concentrations in real time.

With respect to claim 2, Schneider, Katz, Billings and Yao disclose the apparatus set forth in claim 1 as set forth in the 35 U.S.C. 103 rejection above. In addition, Schneider clearly teaches that the electric values are physically separated from the program controller. Furthermore, the operation of the valves is regulated using the program controller.

2) Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US 4670148) in view of Katz (US 4838733), Billings (US 5653288) and Yao (US 6541073) as applied to claim 1, and further in view of Noble (US 4442974).

Schneider, Katz, Billings and Yao disclose the apparatus set forth in claim 1 as set forth in the 35 U.S.C. 103 rejections above. Additionally, Katz clearly teaches that the sampling rods are connected to the pipe using a coupling (Figure 4:160) facilitating the fastening and insertion of the pipe. This is described in column 5, lines 47-64. Schneider, Katz and Billings, however, do not expressly teach the use of a coupling that includes a packing gland.

Noble discloses a land irrigation system comprising a system of pipes capable of moving a fluid from a main line (Figure 1:33) out through a sprinkler line (Figure 1:25). The system of pipes is complex and requires many couplings to facilitate the fastening of individual pipes to one another. Noble teaches in column 6, lines 13-33 and column 7, line 67 to column 8, line 51 that packing glands are used to form couplings.

Schneider and Noble are analogous art because they are directed toward the same field of endeavor regarding the forming of pipe connections.

At the time of the invention, it would have been obvious to utilize packing glands in forming the connection between the pipe disclosed by Schneider to each individual rod. Noble teaches that packing glands are beneficial because they serve to reduce leakage while allowing for rotation of the pipes while connected. It would have required only minor alterations to the Schneider reference in order to utilize packing glands at the junction between the pipe and each rod.

3) Claims 5, 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US 4670148) in view of Katz (US 4838733), Billings (US 5653288) and Yao (US 6541073), and further in view of Johnson (US 4026355).

Schneider, Katz, Billings, Yao and Noble disclose the combination as described in the 35 U.S.C. 103 rejections above. Schneider, however, does not expressly state that temperature is measured using at least one temperature probe.

Johnson discloses a method for testing and monitoring landfill gas comprising a plurality of rods (Figure 5:85) each capable of withdrawing a sample from the interior of

a compost pile. Column 7, lines 21-33 further state that temperature probes are used to measure heat accumulation within the compost piles.

Schneider and Johnson are analogous art because they are from the same field of endeavor regarding compost gas monitoring devices.

At the time of the invention, it would have been obvious not only to provide oxygen concentration monitoring probes within the apparatus of Schneider, but also temperature monitoring probes as well. It is known in the art that temperature is a good indicator or microbial activity within a compost system. Furthermore, temperature readings can be used to anticipate undesirable pressure build-ups within the waste pile.

4) Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US 4670148) in view of Katz (US 4838733), Billings (US 5653288), Yao (US 6541073) and Johnson (US 4026355) as applied to claims 6 and 9, and further in view of Jackson (US 20020023505).

Schneider, Katz, Billings, Yao and Johnson disclose the apparatus set forth in claims 6 and 9, however do not expressly disclose the use of a rotameter.

Jackson discloses a system for removing air from the ground. Jackson teaches that a sampling rod (Figure 1:10) comprising a plurality of openings (Figure 1:12) is inserted into a subsurface region (Figure 1:13) so that air is removed from the subsurface for processing. This is disclosed in paragraph [0027]. Paragraphs [0031] and [0032] state that a rotameter is used to measure the rate of air flow through the sampling rod.

Schneider and Jackson are analogous art because they are from the same field of endeavor regarding subsurface air sampling devices.

At the time of the invention, it would have been obvious to include a rotameter device in the apparatus of Schneider. Jackson teaches that rotameters are desirable because they are well known in the art as effective flow rate measuring devices. Rotameters exhibit the additional advantage of forming a tight seal with a valve seat, thereby preventing air flow in a reverse direction. See Figure 4 and paragraph [0031].

Response to Arguments

Applicant's arguments filed 19 April 2010 with respect to the 35 U.S.C. 103 rejections involving the combination of Schneider, Katz, Yao and Billings have been fully considered but they are not persuasive.

Applicant's principle arguments are

(a) Schneider teaches multiple sensors, wherein at least one sensor is associated with each gas withdrawal line. Such a teaching does not give incentive to use only one sensor.

In response, please consider the following remarks.

The claims do not require the use of only one sensor (i.e. probe), but rather indicate that the remote bay has "one measurement probe." The language "one measurement probe" is broad and encompasses the use of additional measurement probes. The term "one measurement probe" is largely synonymous with the term "a measurement probe." This position is supported by the fact for the majority of

prosecution, claim 4 served to further limit the term "one measurement probe" by reciting "a single gas measurement probe."

For the sake of argument, if claim 1 does, in fact, require one and only one measurement probe, then one of ordinary skill would have found it obvious to operate the Schneider system using only one probe. As admitted by Applicant, the use of multiple sensors results in higher costs and more complexity for calibration and maintenance. Surely, it is been well known in the art for many years that the benefits of using additional equipment may in some instances be offset by associated increases in capital and operating costs.

(b) Schneider and Katz disclose that the gas withdrawal lines are inserted into wells, and therefore there would be no motivation to taper the sampling rod of Schneider.

In response, please consider the following remarks.

It is agreed that the wells of Schneider allow for the insertion of sampling rods that are not tapered. However, one of ordinary skill would have recognized that by tapering the ends of the Schneider sampling rods, the rods could be pushed into the waste material without creating pre-dug wells. One of ordinary skill would have understood that it would be beneficial to taper the Schneider sampling rods when it is determined that forming wells in the waste swaths is either a more expensive option or impossible. As described in the rejections above, Katz discloses the use of tapered sampling rods.

(c) The apertures of Katz are not at the end of the drawtubes, but rather at a distance from the end.

In response, please consider the following remarks.

This argument has been previously addressed at least in the Office Action mailed 6/23/2009. As illustrated in Figure 6, the Katz apertures are located adjacent to the rounded bottom of each drawtube, and therefore are considered to be located at the "end" of each drawtube.

(d) There is no pipe in Katz's drawtube. There is no teaching the cited documents for departing from Katz's teaching and adding a pipe.

In response, please consider the following remarks.

The Billilngs reference is provided as evidence that it is known in the art to provide an intake strainer comprising a tube formed concentrically around a pipe. Modification of the Katz reference according to the teachings of Billings would not require adding a pipe and suppressing the apertures. Instead, the proposed combination would merely require adding a tube concentrically around the existing pipe of Katz in order to trap a filtering device therebetween. This construction is disclosed by Billings in Figures 5-7.

(e) The Katz drawtubes appear to be permanently left into their final position. If by chance they are reused and damaged, the whole tube will have to be changed and disposed of.

In response, please consider the following remarks.

The claims are devoid of limitations specifying the strength of the sampling device, and the portability/removability of the sampling rod and intake strainer tube. Accordingly, the Schneider and Katz drawtubes read on the claim limitations even if, for the sake of argument, they are permanently left in their final position.

(f) Billings discloses an injection system for treating water, and is therefore is in a completely different field from the sampling of gas.

In response, please consider the following remarks.

It is agreed that Billlings discloses an injection system for treating a waste swath, wherein contaminants are removed from the soil sample by sucking a fluid through the screen and out each pipe. This is described in column 7, line 52 to column 8, line 59.

Accordingly, Billings is drawn to sampling a liquid rather than sampling a gas. In spite of this difference, Billings is still analogous art because it is drawn to a system for sampling a fluid using a plurality of plastic pipes from a soil/waste location. The structure of the Billings apparatus is very similar to the structure of the instant invention, as well as those of Schneider and Katz in that they all comprise a plurality of pipes that are driven into a waste heap in order to draw fluid via suction to an analysis site. All of these references are drawn to subterranean sampling and analysis systems.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A. Bowers whose telephone number is (571) 272-8613. The examiner can normally be reached on Monday-Friday 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Marcheschi can be reached on (571) 272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nathan A Bowers/
Examiner, Art Unit 1797